

UNCLASSIFIED

PE NUMBER: 0604853F

PE TITLE: Evolved Expendable Launch Vehicle - EMD

Exhibit R-2, RDT&E Budget Item Justification								DATE February 2004	
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)				PE NUMBER AND TITLE 0604853F Evolved Expendable Launch Vehicle - EMD					
Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	55.782	7.909	27.000	17.153	17.963	0.000	0.000	0.000	1,412.406
0004 Evolved Expendable Launch Vehicle	55.782	7.909	27.000	17.153	17.963	0.000	0.000	0.000	1,412.406

(U) **A. Mission Description and Budget Item Justification**

The Evolved Expendable Launch Vehicle (EELV) program is a jointly funded (government and industry) space launch system developed in partnership with industry to provide two competitive families of launch vehicles (Delta IV & Atlas V). The program will satisfy the government's National Launch Forecast (NLF) requirements, reduce the cost of space launch by at least 25%, and satisfy commercial satellites' launch services needs.

EELV is a commercial launch service, not a weapon system. The EELV program includes launch vehicles, a standard payload interface, support systems, mission integration (includes mission unique requirements), flight instrumentation and range interfaces, special studies (mission feasibility analysis, secondary payloads, dual manifesting, dual integration, special flight instrumentation, loads analysis, etc.), post-flight data evaluation and analysis, mission assurance, assured access, government mission director, system/process and reliability improvements, training, and technical support. In addition, the system includes launch site/operations activities, activities in support of assured access, systems integration and tests, and other related support activities. The program will also design and develop a Global Positioning System (GPS) Metric Tracking capability for obtaining real-time booster position data during flight.

The EELV system provides two families of launch vehicles (Delta IV and Atlas V). EELV is responsible for launching Government manifested payloads via commercial launch services, including those currently supported by Titan II, Delta II, Atlas II/III, and Titan IV. Evolved from current expendable launch systems and new applications of existing technology, EELV supports military, intelligence, civil, and commercial mission requirements.

An EELV Heavy Lift Vehicle (HLV) demonstration was added to the program in response to the Space Launch Broad Area Review (BAR) and the EELV Joint Assessment Team (JAT) to increase mission assurance and confidence in the HLV. A HLV demonstration test article is scheduled for launch in FY04.

This program element is in Budget Activity 5, System Development and Demonstration, because it supports development and demonstration of the EELV concept leading to deployment of a lower cost expendable launch vehicle system.

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05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604853F Evolved Expendable Launch Vehicle - EMD

(U) **B. Program Change Summary (\$ in Millions)**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Previous President's Budget	56.954	8.000	15.000
(U) Current PBR/President's Budget	55.782	7.909	27.000
(U) Total Adjustments	-1.172	-0.091	
(U) Congressional Program Reductions		-0.091	
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-1.172		

(U) **Significant Program Changes:**

FY05 funding for the GPS Metric Tracking Booster Capability Integration effort was increased based on in-depth contractor assessments reflecting clarified Operational Requirements Document requirements and government cost estimates.

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Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604853F Evolved Expendable
Launch Vehicle - EMD

PROJECT NUMBER AND TITLE

0004 Evolved Expendable Launch
Vehicle

Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
0004 Evolved Expendable Launch Vehicle	55.782	7.909	27.000	17.153	17.963	0.000	0.000	0.000	1,412.406
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) **A. Mission Description and Budget Item Justification**

The Evolved Expendable Launch Vehicle (EELV) program is a jointly funded (government and industry) space launch system developed in partnership with industry to provide two competitive families of launch vehicles (Delta IV & Atlas V). The program will satisfy the government's National Launch Forecast (NLF) requirements, reduce the cost of space launch by at least 25%, and satisfy commercial satellites' launch services needs.

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This program element is in Budget Activity 5, System Development and Demonstration, because it supports development and demonstration of the EELV concept leading to deployment of a lower cost expendable launch vehicle system.

(U) **B. Accomplishments/Planned Program (\$ in Millions)**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Completed System Development/Analysis	7.469		
(U) Other Support Costs (fully transferred to 3020 starting in FY04)	9.121		
(U) Continue GPS Metric Tracking Booster Capability Integration	6.566	0.909	13.000
(U) Completed HLV Demonstration Integration; Accomplish Demonstration Article Launch and Delivery/Review	32.626		
(U) Assured Access initiatives		7.000	14.000
(U) Total Cost	55.782	7.909	27.000

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R-1 Shopping List - Item No. 91-3 of 91-7

Exhibit R-2a (PE 0604853F)

Exhibit R-2a, RDT&E Project Justification		DATE February 2004
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604853F Evolved Expendable Launch Vehicle - EMD	PROJECT NUMBER AND TITLE 0004 Evolved Expendable Launch Vehicle

(U) **C. Other Program Funding Summary (\$ in Millions)**(U) **D. Acquisition Strategy**

The EELV concept of families of launch vehicles emphasizes commonality of hardware, infrastructure, and economies of scale to enhance production, operations, and support efficiencies. Four initial contracts were awarded for the Low Cost Concept Validation (LCCV) phase in August 1995. The Air Force downselected to two contractors - The Boeing Company (TBC) and Lockheed Martin (LM) - for the Pre-Engineering and Manufacturing Development (Pre-EMD) phase in December 1996. On 16 Oct 1998, two \$500M Other Transaction Agreements (OTA) were awarded to TBC and LM for the development effort. The contractors have contributed additional funds of their own, as necessary, to bring their national launch operational capability on line. It is estimated that each contractor has invested approximately \$1B. Simultaneous with the award of the development effort, Initial Launch Services (ILS) contracts were awarded to Boeing for \$1.38B (19 missions) and to Lockheed Martin for \$649M (9 missions).

On 18 Sep 2000, a revised acquisition strategy was reviewed by the DEPSECDEF and signed by USD (AT&L). Under the revised strategy, only TBC would develop a Vandenberg AFB launch facility. LM transferred two West Coast Defense Meteorological Satellite Program (DMSP) missions to TBC and provided the government additional consideration. Furthermore, the program restructure included the procurement of a SECAF-directed heavy lift demonstration launch to increase confidence in the Delta IV Heavy Lift Vehicle (HLV) prior to the first operational government HLV launch.

On 24 Jul 2003, the investigation into Procurement Integrity Act violations by TBC resulted in transferring seven ILS missions from TBC to LM. In addition, TBC's exclusive right to west coast missions was rescinded. LM will develop a Vandenberg AFB launch facility by mid CY05.

The acquisition approach maintains competition throughout the life of the program, leverages the commercial launch market, caps the government's development costs, and allows partnership with industry, while still reducing the program's overall cost to launch the NLF by at least 25% over existing systems. The EELV system will launch the majority of the government portion of the NLF through 2020 and the government will continue to work in partnership with industry to capture continuous product and process improvements that will enhance reliability and reduce both the contractors' and government's total operating costs.

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Exhibit R-3, RDT&E Project Cost Analysis									DATE				
									February 2004				
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE				
05 System Development and Demonstration (SDD)				0604853F Evolved Expendable Launch Vehicle - EMD					0004 Evolved Expendable Launch Vehicle				
(U)	Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2003 Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U)	<u>Product Development</u>												
	Prime Contractor Boeing	OTA/ILS		641.067	40.673		7.454		13.500		17.558	720.252	
	Prime Contractor Lockheed Martin	OTA/ILS		530.968	5.988		0.455		13.500		17.558	568.469	
	Subtotal Product Development			1,172.035	46.661		7.909		27.000		35.116	1,288.721	0.000
	Remarks:												
(U)	<u>Support</u>												
	SPO/CTF Range Mission Spt	Various		33.337	7.990							41.327	
	FFRDC	SS/CPAF		67.214								67.214	
	Other Cntr Spt	Various		14.013	1.131							15.144	
	Subtotal Support			114.564	9.121		0.000		0.000		0.000	123.685	0.000
	Remarks:												
(U)	<u>Test & Evaluation</u>												
	Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
	Remarks:												
(U)	<u>Management</u>												
	Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
	Remarks:												
(U)	Total Cost			1,286.599	55.782		7.909		27.000		35.116	1,412.406	0.000
Project 0004													
R-1 Shopping List - Item No. 91-5 of 91-7													
Exhibit R-3 (PE 0604853F)													

Exhibit R-4, RDT&E Schedule Profile

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05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

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Launch Vehicle - EMD

PROJECT NUMBER AND TITLE

0004 Evolved Expendable Launch
Vehicle

Key Program Events



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Exhibit R-4a, RDT&E Schedule Detail			DATE February 2004	
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE		
05 System Development and Demonstration (SDD)	0604853F Evolved Expendable Launch Vehicle - EMD	0004 Evolved Expendable Launch Vehicle		
(U) <u>Schedule Profile</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	
(U) 1st Commercial Delta IV Launch	1Q			
(U) GPS Metric Tracking Project Planning & Requirements Analysis	3-4Q	1-3Q		
(U) 1st Government Delta IV Launch	2Q			
(U) HLV Demonstration Launch		4Q		
(U) GPS Metric Tracking Project Planning & Requirements Integration		4Q	1Q	
(U) 1st Government Operational HLV Launch			2Q	
(U) Continue GPS Metric Tracking Integration			1-4Q	

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R-1 Shopping List - Item No. 91-7 of 91-7

Exhibit R-4a (PE 0604853F)